NTIA Space Record Data Form

NTIA requires the following data for space related experiments using government shared spectrum. For each transmit frequency, please provide the data for both ends of the transmit-receive link. Use Part A to describe the satellite to ground information. Part B is for all ground to space transmit links. Part C is for all space to space transmit links.

Transmit Frequency: 400.45 – 400.55 MHz		
Satellite Name: M-SEL (Transmitter 1)		
Polarization (XAP)	XAP = XAP01 J	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Orientation (XAZ)	XAZ = XAZ01 EC	NB= NARROWBEAM EC = EARTH COVERAGE
Antenna Dimension (XAD)	ANTENNA GAIN(dBi) 2 dBi BEAMWIDTH@ ½ Power 180 degrees XAD = XAD01 02G0180B	(NTIA format (XAD), EXAMPLE, XAD01 16G030B)
Type of satellite (State = SP) (City = geo or non)	Type = Nongeostationary	Choose either: Geostationary or Nongeostationary
For Geostationary	Longitude =	IF ANY SATELLITES ARE GEOSTATIONARY, REPORT ITS LATITUDE AS 000000N (XLA AND/OR RLA) AND REPORT ITS LONGITUDE (XLG AND/OR RLG).
For Nongeostationary (Orbital Data)	INCLINATION ANGLE 97 degrees, APOGEE IN KILOMETERS 510 km, PERIGEE IN KILOMETERS 510 km, ORBITAL PERIOD IN HOURS 1 AND FRACTIONS OF HOURS IN DECIMAL 0.6, THE NUMBER OF SATELLITES IN THE SYSTEM 1, ORB = 97IN00510AP00510PE001.6H01NRT01	IF ANY SATELLITES ARE NONGEOSTATIONARY, REPORT ITS INCLINATION ANGLE, APOGEE IN KILOMETERS, PERIGEE IN KILOMETERS, ORBITAL PERIOD IN HOURS AND FRACTIONS OF HOURS IN DECIMAL, THE NUMBER OF SATELLITES IN THE SYSTEM, THEN T01, EXAMPLE, REM04 *ORB,98.0IN00510AP00510PE001.5

Part A: Space to Earth Downlink Data

		8H01NRT01, AND FOR SPACE-TO- SPACE COMMUNICATIONS WITH ANOTHER NONGEOSTATIONARY SATELLITE ADD AN ADDITIONAL *ORB FOR IT ENDING IN R01, EXAMPLE, REM05 *ORB,72.9IN03209AP00655PE013.4 6H01NRR01
Earth Station Data	– Leaf Space – Santa Maria	
State (RSC)	RSC = Portugal	
City Name (RAL)	RAL = Santa Maria	
Latitude (DDMMSS)	Lat = 365951 N	
Longitude (DDDMMSS)	Lon = 0250810 W	
Antenna Polarization (RAP)	RAP = RAP01 J	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Antenna Azimuth (RAZ)	RAZ = RAZ01 V00	THE EARTH STATION RECEIVER ANTENNA AZIMUTH (RAZ), THE MINIMUM ANGLE OF ELEVATION, V00 TO V90, EXAMPLE, RAZ01 V00
Antenna Dimensions (RAD)	ANTENNA GAIN(dBi) 15.4 dBi, BEAMWIDTH@ ½ Power 20 degrees, AZIMUTHAL RANGE 0-360 degrees, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 200 meters THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 12 meters RAD = RAD01 15G020B000-360A00200H012	EXAMPLE ASSUMING NONGEOSTATIONARY, RAD01 16G030B000-360A00357H006
Earth Station Data	– Leaf Space - Lamazzo	-
State (RSC)	RSC = Italy	
City Name (RAL)	RAL = Lamazzo	

		1
Latitude	Lat = 454150 N	
(DDMMSS)		
Longitude	Lon = 0090205 E	
(DDDMMSS)		
Antenna	RAP = RAP02 J	POLARIZATIONS INCLUDE :
Polarization (RAP)		H = HORIZONTAL,
		V = VERTICAL,
		S = HORIZONTAL AND VERTICAL,
		L = LEFT HAND CIRCULAR,
		R = RIGHT HAND CIRCULAR,
		T = RIGHT AND LEFT HAND
		CIRCULAR,
		J = LINEAR POLARIZATION
Antenna Azimuth	RAZ = RAZ02 V00	THE EARTH STATION RECEIVER
(RAZ)		ANTENNA AZIMUTH (RAZ), THE
		MINIMUM ANGLE OF
		ELEVATION, V00 TO V90, EXAMPLE,
		RAZ01 V00
Antenna	ANTENNA GAIN(dBi) 14.8 dBi,	EXAMPLE ASSUMING
Dimensions (RAD)	BEAMWIDTH@ ½ Power 40 degrees,	NONGEOSTATIONARY, RAD01
	AZIMUTHAL RANGE 0-360 degrees,	16G030B000-360A00357H006
	THE SITE ELEVATION ABOVE MEAN SEA	
	LEVEL IN METERS 313 meters	
	THE ANTENNA HEIGHT ABOVE TERRAIN	
	IN METERS 24 meters	
	RAD =	
	RAD02 15G040B000-360A00313H024	
	– Leaf Space - Vimercate	1
State (RSC)	RSC = Italy	
City Name (RAL)	RAL = Vimercate	
Latitude	Lat = 453536 N	
(DDMMSS)		
Longitude	Lon = 0092144 E	
(DDDMMSS)		
Antenna	RAP = RAP03 J	POLARIZATIONS INCLUDE :
Polarization (RAP)		H = HORIZONTAL,
		V = VERTICAL,
		S = HORIZONTAL AND VERTICAL,
		L = LEFT HAND CIRCULAR,
		R = RIGHT HAND CIRCULAR,
		T = RIGHT AND LEFT HAND
		CIRCULAR,
		J = LINEAR POLARIZATION

Antenna Azimuth (RAZ)	RAZ = RAZ03 V00	THE EARTH STATION RECEIVER ANTENNA AZIMUTH (RAZ), THE MINIMUM ANGLE OF ELEVATION, V00 TO V90, EXAMPLE, RAZ01 V00
Antenna Dimensions (RAD)	ANTENNA GAIN(dBi) 14.8 dBi, BEAMWIDTH@ ½ Power 40 degrees, AZIMUTHAL RANGE 0-360 degrees, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 190 meters THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 12 meters RAD =	EXAMPLE ASSUMING NONGEOSTATIONARY, RAD01 16G030B000-360A00357H006
	RAD03 15G040B000-360A00190H012	
Earth Station Data	– Leaf Space - Kaspichan	
State (RSC)	RSC = Bulgaria	
City Name (RAL)	RAL = Kaspichan	
Latitude (DDMMSS)	Lat = 431849 N	
Longitude (DDDMMSS)	Lon = 0270927 E	
Antenna Polarization (RAP)	RAP = RAP04 J	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Antenna Azimuth (RAZ)	RAZ = RAZ04 V00	THE EARTH STATION RECEIVER ANTENNA AZIMUTH (RAZ), THE MINIMUM ANGLE OF ELEVATION, V00 TO V90, EXAMPLE, RAZ01 V00
Antenna Dimensions (RAD)	ANTENNA GAIN(dBi) 14.8 dBi, BEAMWIDTH@ ½ Power 40 degrees, AZIMUTHAL RANGE 0-360 degrees, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 97 meters THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 8 meters RAD =	EXAMPLE ASSUMING NONGEOSTATIONARY, RAD01 16G030B000-360A00357H006

	RAD04 15G040B000-360A00097H008	
Earth Station Data	– RBC Signals - Pretoria	
State (RSC)	RSC = South Africa	
City Name (RAL)	RAL = Pretoria	
Latitude (DDMMSS)	Lat = 255139 S	
Longitude (DDDMMSS)	Lon = 0282712 E	
Antenna Polarization (RAP)	RAP = RAP05 J	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Antenna Azimuth (RAZ)	RAZ = RAZ05 V00	THE EARTH STATION RECEIVER ANTENNA AZIMUTH (RAZ), THE MINIMUM ANGLE OF ELEVATION, V00 TO V90, EXAMPLE, RAZ01 V00
Antenna Dimensions (RAD)	ANTENNA GAIN(dBi) 16.2 dBi, BEAMWIDTH@ ½ Power 40 degrees, AZIMUTHAL RANGE 0-360 degrees, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 1391 meters THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 6 meters RAD =	EXAMPLE ASSUMING NONGEOSTATIONARY, RAD01 16G030B000-360A00357H006
	RAD05 16G040B000-360A01391H006	
FCC notes:		
1. Use S-Note	\$945.	
	Cubesat, (MITRE)	
Z. NEIVIAGN,		

Transmit Frequency: 1.525-1.559 GHz		
Satellite Name: M-S	EL (Transmitter 2)	
Polarization (XAP)	XAP = XAP02 T	POLARIZATIONS INCLUDE :
		H = HORIZONTAL,
		V = VERTICAL,
		S = HORIZONTAL AND VERTICAL,
		L = LEFT HAND CIRCULAR,
		R = RIGHT HAND CIRCULAR,

		T = RIGHT AND LEFT HAND
		CIRCULAR,
		J = LINEAR POLARIZATION
Orientation (XAZ)	XAZ = XAZ02 NB	NB= NARROWBEAM
•		EC = EARTH COVERAGE
Antenna	ANTENNA GAIN(dBi) 7 dBi	(NTIA format (XAD), EXAMPLE,
Dimension (XAD)	BEAMWIDTH@ ½ Power 50 degrees	XAD01 16G030B)
T C C U	XAD = XAD04 07G050B	
Type of satellite	Type = Nongeostationary	Choose either:
(State = SP)		Geostationary or
(City = geo or		Nongeostationary
non)		
For Geostationary	Longitude =	IF ANY SATELLITES ARE
,		GEOSTATIONARY, REPORT ITS
		LATITUDE AS 000000N (XLA AND/OR
		RLA) AND REPORT ITS LONGITUDE
		(XLG AND/OR RLG).
For	INCLINATION ANGLE 97 degrees,	IF ANY SATELLITES ARE
Nongeostationary	APOGEE IN KILOMETERS 510 km,	NONGEOSTATIONARY, REPORT ITS
(Orbital Data)	PERIGEE IN KILOMETERS 510 km,	INCLINATION ANGLE, APOGEE
	ORBITAL PERIOD IN HOURS 1 AND	IN KILOMETERS, PERIGEE IN
	FRACTIONS OF HOURS IN DECIMAL 0.6,	KILOMETERS, ORBITAL PERIOD IN
	THE NUMBER OF SATELLITES IN THE	HOURS AND FRACTIONS OF
	SYSTEM 1,	HOURS IN DECIMAL, THE NUMBER
		OF SATELLITES IN THE SYSTEM,
	ORB =	THEN TO1, EXAMPLE,
	97IN00510AP00510PE001.6H01NRT01	REM04
		*ORB,98.0IN00510AP00510PE001.5
		8H01NRT01, AND FOR SPACE-TO-
		SPACE
		COMMUNICATIONS WITH ANOTHER
		NONGEOSTATIONARY SATELLITE
		ADD AN ADDITIONAL
		*ORB FOR IT ENDING IN R01,
		EXAMPLE, REMO5
		*ORB,72.9IN03209AP00655PE013.4
		6H01NRR01
	l	l
Earth Station Data	- MITRE Corporation Bedford MA USA (Rec	eiver 6)
State (RSC)	RSC = Massachusetts USA	
City Name (RAL)	RAL = Bedford	
Latitude	Lat = 423018 N	
(DDMMSS)		

Longitude	Lon = 0711407 W	
(DDDMMSS)		
Antenna	RAP = RAP06 T	POLARIZATIONS INCLUDE :
Polarization (RAP)		H = HORIZONTAL,
		V = VERTICAL,
		S = HORIZONTAL AND VERTICAL,
		L = LEFT HAND CIRCULAR,
		R = RIGHT HAND CIRCULAR,
		T = RIGHT AND LEFT HAND
		CIRCULAR,
		J = LINEAR POLARIZATION
Antenna Azimuth	RAZ = RAZ06 V25	THE EARTH STATION RECEIVER
(RAZ)		ANTENNA AZIMUTH (RAZ), THE
		MINIMUM ANGLE OF
		ELEVATION, V00 TO V90, EXAMPLE,
		RAZ01 V00
Antenna	ANTENNA GAIN(dBi) 17 dBi,	EXAMPLE ASSUMING
Dimensions (RAD)	BEAMWIDTH@ ½ Power 7 degrees,	NONGEOSTATIONARY, RAD01
	AZIMUTHAL RANGE 0-360 degrees,	16G030B000-360A00357H006
	THE SITE ELEVATION ABOVE MEAN SEA	
	LEVEL IN METERS 77 meters	
	THE ANTENNA HEIGHT ABOVE TERRAIN	
	IN METERS 3 meters	
	RAD =	
	RAD06 17G007B000-360A00077H003	
FCC notes:		
1. Use S-Note S945.		
2. REM AGN,	Cubesat, (MITRE)	

Transmit Frequency	Transmit Frequency: 2.170-2.200 GHz		
Satellite Name: M-SEL (Transmitter 3)			
Polarization (XAP)	XAP = XAP03 T	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL,	
		S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION	
Orientation (XAZ)	XAZ = XAZ03 NB	NB= NARROWBEAM EC = EARTH COVERAGE	
Antenna	ANTENNA GAIN(dBi) 9 dBi	(NTIA format (XAD), EXAMPLE,	
Dimension (XAD)	BEAMWIDTH@ ½ Power 40 degrees	XAD01 16G030B)	

	XAD = XAD03 09G040B	
Type of satellite (State = SP) (City = geo or non)	Type = Nongeostationary	Choose either: Geostationary or Nongeostationary
For Geostationary	Longitude =	IF ANY SATELLITES ARE GEOSTATIONARY, REPORT ITS LATITUDE AS 000000N (XLA AND/OR RLA) AND REPORT ITS LONGITUDE (XLG AND/OR RLG).
For Nongeostationary (Orbital Data)	INCLINATION ANGLE 97 degrees, APOGEE IN KILOMETERS 510 km, PERIGEE IN KILOMETERS 510 km, ORBITAL PERIOD IN HOURS 1 AND FRACTIONS OF HOURS IN DECIMAL 0.6, THE NUMBER OF SATELLITES IN THE SYSTEM 1, ORB = 97IN00510AP00510PE001.6H01NRT01	IF ANY SATELLITES ARE NONGEOSTATIONARY, REPORT ITS INCLINATION ANGLE, APOGEE IN KILOMETERS, PERIGEE IN KILOMETERS, ORBITAL PERIOD IN HOURS AND FRACTIONS OF HOURS IN DECIMAL, THE NUMBER OF SATELLITES IN THE SYSTEM, THEN T01, EXAMPLE, REM04 *ORB,98.0IN00510AP00510PE001.5 8H01NRT01, AND FOR SPACE-TO- SPACE COMMUNICATIONS WITH ANOTHER NONGEOSTATIONARY SATELLITE ADD AN ADDITIONAL *ORB FOR IT ENDING IN R01, EXAMPLE, REM05 *ORB,72.9IN03209AP00655PE013.4 6H01NRR01
Earth Station Data	- MITRE Corporation Bedford MA USA (Red	ceiver 7)
State (RSC)	RSC = Massachusetts USA	
City Name (RAL)	RAL = Bedford	
Latitude (DDMMSS)	Lat = 423018 N	
Longitude (DDDMMSS)	Lon = 0711407 W	
Antenna Polarization (RAP)	RAP = RAP07 T	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR,

Antenna Azimuth (RAZ)	RAZ = RAZ07 V25	T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION THE EARTH STATION RECEIVER ANTENNA AZIMUTH (RAZ), THE MINIMUM ANGLE OF ELEVATION, V00 TO V90, EXAMPLE, RAZ01 V00
Antenna Dimensions (RAD)	ANTENNA GAIN(dBi) 21 dBi, BEAMWIDTH@ ½ Power 5 degrees, AZIMUTHAL RANGE 0-360 degrees, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 77 meters THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 3 meters RAD =	EXAMPLE ASSUMING NONGEOSTATIONARY, RAD01 16G030B000-360A00357H006
FCC notes:	RAD07 21G005B000-360A00077H003	
1. Use S-Note	\$945.	
2. REM AGN,	Cubesat, (MITRE)	

Transmit Frequency	y: 2.4835-2.520 GHz	
Satellite Name: M-SEL (Transmitter 4)		
Polarization (XAP)	XAP = XAP04 T	POLARIZATIONS INCLUDE :
		H = HORIZONTAL,
		V = VERTICAL,
		S = HORIZONTAL AND VERTICAL,
		L = LEFT HAND CIRCULAR,
		R = RIGHT HAND CIRCULAR,
		T = RIGHT AND LEFT HAND
		CIRCULAR,
		J = LINEAR POLARIZATION
Orientation (XAZ)	XAZ = XAZ04 NB	NB= NARROWBEAM
		EC = EARTH COVERAGE
Antenna	ANTENNA GAIN(dBi) 11 dBi	(NTIA format (XAD), EXAMPLE,
Dimension (XAD)	BEAMWIDTH@ ½ Power 35 degrees	XAD01 16G030B)
	XAD = XAD04 11G035B	
Type of satellite	Type = Nongeostationary	Choose either:
(State = SP)		Geostationary or
(City = geo or		Nongeostationary
non)		
For Geostationary	Longitude =	IF ANY SATELLITES ARE
		GEOSTATIONARY, REPORT ITS

For Nongeostationary (Orbital Data)	INCLINATION ANGLE 97 degrees, APOGEE IN KILOMETERS 510 km, PERIGEE IN KILOMETERS 510 km, ORBITAL PERIOD IN HOURS 1 AND FRACTIONS OF HOURS IN DECIMAL 0.6, THE NUMBER OF SATELLITES IN THE SYSTEM 1, ORB = 97IN00510AP00510PE001.6H01NRT01	LATITUDE AS 00000N (XLA AND/OR RLA) AND REPORT ITS LONGITUDE (XLG AND/OR RLG). IF ANY SATELLITES ARE NONGEOSTATIONARY, REPORT ITS INCLINATION ANGLE, APOGEE IN KILOMETERS, PERIGEE IN KILOMETERS, ORBITAL PERIOD IN HOURS AND FRACTIONS OF HOURS IN DECIMAL, THE NUMBER OF SATELLITES IN THE SYSTEM, THEN T01, EXAMPLE, REM04 *ORB,98.0IN00510AP00510PE001.5 8H01NRT01, AND FOR SPACE-TO- SPACE COMMUNICATIONS WITH ANOTHER NONGEOSTATIONARY SATELLITE ADD AN ADDITIONAL *ORB FOR IT ENDING IN R01, EXAMPLE, REM05 *ORB,72.9IN03209AP00655PE013.4 6H01NRR01
Earth Station Data	- MITRE Corporation Bedford MA USA (Re	ceiver 08)
State (RSC)	RSC = Massachusetts USA	
City Name (RAL)	RAL = Bedford	
Latitude (DDMMSS)	Lat = 423018 N	
Longitude (DDDMMSS)	Lon = 0711407 W	
Antenna Polarization (RAP)	RAP = RAP08 T	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Antenna Azimuth (RAZ)	RAZ = RAZ08 V25	THE EARTH STATION RECEIVER ANTENNA AZIMUTH (RAZ), THE MINIMUM ANGLE OF ELEVATION, V00 TO V90, EXAMPLE, RAZ01 V00

Antenna Dimensions (RAD)	ANTENNA GAIN(dBi) 24 dBi, BEAMWIDTH@ ½ Power 4 degrees, AZIMUTHAL RANGE 0-360 degrees,	EXAMPLE ASSUMING NONGEOSTATIONARY, RAD01 16G030B000-360A00357H006
	THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 77 meters THE ANTENNA HEIGHT ABOVE TERRAIN	1000305000-30040033711000
	IN METERS 3 meters RAD = RAD08 24G004B000-360A00077H003	
FCC notes:		
1. Use S-Note S945.		
2. REM AGN, Cubesat, (MITRE)		

Transmit Frequency: 4.90-4.99 GHz		
Satellite Name: M-SEL (Transmitter 5)		
Polarization (XAP)	XAP = XAP05 T	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Orientation (XAZ)	XAZ = XAZ05 NB	NB= NARROWBEAM EC = EARTH COVERAGE
Antenna Dimension (XAD)	ANTENNA GAIN(dBi) 17 dBi BEAMWIDTH@ ½ Power 20 degrees XAD = XAD05 17G020B	(NTIA format (XAD), EXAMPLE, XAD01 16G030B)
Type of satellite (State = SP) (City = geo or non)	Type = Nongeostationary	Choose either: Geostationary or Nongeostationary
For Geostationary	Longitude =	IF ANY SATELLITES ARE GEOSTATIONARY, REPORT ITS LATITUDE AS 000000N (XLA AND/OR RLA) AND REPORT ITS LONGITUDE (XLG AND/OR RLG).
For Nongeostationary (Orbital Data)	INCLINATION ANGLE 97 degrees, APOGEE IN KILOMETERS 510 km, PERIGEE IN KILOMETERS 510 km, ORBITAL PERIOD IN HOURS 1 AND FRACTIONS OF HOURS IN DECIMAL 0.6,	IF ANY SATELLITES ARE NONGEOSTATIONARY, REPORT ITS INCLINATION ANGLE, APOGEE

	THE NUMBER OF SATELLITES IN THE SYSTEM 1, ORB = 97IN00510AP00510PE001.6H01NRT01	IN KILOMETERS, PERIGEE IN KILOMETERS, ORBITAL PERIOD IN HOURS AND FRACTIONS OF HOURS IN DECIMAL, THE NUMBER OF SATELLITES IN THE SYSTEM, THEN T01, EXAMPLE, REM04 *ORB,98.0IN00510AP00510PE001.5 8H01NRT01, AND FOR SPACE-TO- SPACE COMMUNICATIONS WITH ANOTHER NONGEOSTATIONARY SATELLITE ADD AN ADDITIONAL *ORB FOR IT ENDING IN R01, EXAMPLE, REM05 *ORB,72.9IN03209AP00655PE013.4 6H01NRR01
Farth Station Data	- MITRE Corporation Bedford MA USA (Rec	eiver 09)
State (RSC)	RSC = Massachusetts USA	
City Name (RAL)	RAL = Bedford	
Latitude	Lat = 423018 N	
(DDMMSS)		
Longitude	Lon = 0711407 W	
(DDDMMSS)		
Antenna Polarization (RAP)	RAP = RAP09 T	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Antenna Azimuth (RAZ)	RAZ = RAZ09 V25	THE EARTH STATION RECEIVER ANTENNA AZIMUTH (RAZ), THE MINIMUM ANGLE OF ELEVATION, V00 TO V90, EXAMPLE, RAZ01 V00
Antenna Dimensions (RAD)	ANTENNA GAIN(dBi) 29 dBi, BEAMWIDTH@ ½ Power 2 degrees, AZIMUTHAL RANGE 0-360 degrees, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 77 meters	EXAMPLE ASSUMING NONGEOSTATIONARY, RAD01 16G030B000-360A00357H006

	THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 3 meters	
	RAD = RAD09 29G002B000-360A00077H003	
FCC notes:		
1. Use S-Note S945.		
2. REM AGN, Cubesat, (MITRE)		

Transmit Frequency: 6.875-7.055 GHz		
Satellite Name: M-S		
Polarization (XAP)	XAP = XAP06 T	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Orientation (XAZ)	XAZ = XAZ06 EC	NB= NARROWBEAM EC = EARTH COVERAGE
Antenna Dimension (XAD)	ANTENNA GAIN(dBi) 9 dBi BEAMWIDTH@ ½ Power 65 degrees XAD = XAD06 09G065B	(NTIA format (XAD), EXAMPLE, XAD01 16G030B)
Type of satellite (State = SP) (City = geo or non)	Type = Nongeostationary	Choose either: Geostationary or Nongeostationary
For Geostationary	Longitude =	IF ANY SATELLITES ARE GEOSTATIONARY, REPORT ITS LATITUDE AS 000000N (XLA AND/OR RLA) AND REPORT ITS LONGITUDE (XLG AND/OR RLG).
For Nongeostationary (Orbital Data)	INCLINATION ANGLE 97 degrees, APOGEE IN KILOMETERS 510 km, PERIGEE IN KILOMETERS 510 km, ORBITAL PERIOD IN HOURS 1 AND FRACTIONS OF HOURS IN DECIMAL 0.6, THE NUMBER OF SATELLITES IN THE SYSTEM 1, ORB = 97IN00510AP00510PE001.6H01NRT01	IF ANY SATELLITES ARE NONGEOSTATIONARY, REPORT ITS INCLINATION ANGLE, APOGEE IN KILOMETERS, PERIGEE IN KILOMETERS, ORBITAL PERIOD IN HOURS AND FRACTIONS OF HOURS IN DECIMAL, THE NUMBER OF SATELLITES IN THE SYSTEM, THEN T01, EXAMPLE, REM04 *ORB,98.0IN00510AP00510PE001.5

		8H01NRT01, AND FOR SPACE-TO- SPACE COMMUNICATIONS WITH ANOTHER NONGEOSTATIONARY SATELLITE ADD AN ADDITIONAL *ORB FOR IT ENDING IN R01, EXAMPLE, REM05 *ORB,72.9IN03209AP00655PE013.4 6H01NRR01
Earth Station Data	- MITRE Corporation Bedford MA USA (Rec	eiver 10)
State (RSC)	RSC = Massachusetts USA	
City Name (RAL)	RAL = Bedford	
Latitude (DDMMSS)	Lat = 423018 N	
Longitude (DDDMMSS)	Lon = 0711407 W	
Antenna Polarization (RAP)	RAP = RAP10 T	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Antenna Azimuth (RAZ)	RAZ = RAZ10 V25	THE EARTH STATION RECEIVER ANTENNA AZIMUTH (RAZ), THE MINIMUM ANGLE OF ELEVATION, V00 TO V90, EXAMPLE, RAZ01 V00
Antenna Dimensions (RAD)	ANTENNA GAIN(dBi) 36 dBi, BEAMWIDTH@ ½ Power 2 degrees, AZIMUTHAL RANGE 0-360 degrees, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 77 meters THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 3 meters RAD = RAD10 36G002B000-360A00077H003	EXAMPLE ASSUMING NONGEOSTATIONARY, RAD01 16G030B000-360A00357H006
FCC notes:		
1. Use S-Note	S945.	
2. REM AGN, O	Cubesat, (MITRE)	

Part B: Ground Stations, Earth to Space link data:

Transmit Frequency	v: 2025-2110 MHz	
	– Leaf Space – Santa Maria	
State (XSC)	XSC = Portugal	
City Name (XAL)	XAL = Santa Maria	
Latitude	Lat = 365951 N	
(DDMMSS)		
Longitude (DDDMMSS)	Lon = 0250810 W	
Antenna Polarization (XAP)	XAP = XAP01 R	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Antenna Azimuth (XAZ)	XAZ = XAZ01 V05	THE EARTH STATION RECEIVER ANTENNA AZIMUTH (RAZ), THE MINIMUM ANGLE OF ELEVATION, V00 TO V90, EXAMPLE, RAZ01 V00
Antenna Dimensions (XAD)	ANTENNA GAIN(dBi) 19 dBi, BEAMWIDTH@ ½ Power 20 degrees, AZIMUTHAL RANGE 0-360 degrees, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 200 meters THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 12 meters XAD = XAD01 19G020B000-360A00200H012	EXAMPLE ASSUMING NONGEOSTATIONARY, RAD01 16G030B000-360A00357H006
Earth Station Data	– Leaf Space - Vimercate	
State (XSC)	XSC = Italy	
City Name (XAL)	XAL = Vimercate	
Latitude	Lat = 453536 N	
(DDMMSS)		
Longitude (DDDMMSS)	Lon = 0092144 E	
Antenna Polarization (XAP)	XAP = XAP02 R	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL,

Antenna Azimuth (XAZ)	XAZ = XAZ02 V05	L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION THE EARTH STATION RECEIVER ANTENNA AZIMUTH (RAZ), THE MINIMUM ANGLE OF
		ELEVATION, V00 TO V90, EXAMPLE, RAZ01 V00
Antenna Dimensions (XAD)	ANTENNA GAIN(dBi) 34 dBi, BEAMWIDTH@ ½ Power 3 degrees, AZIMUTHAL RANGE 0-360 degrees, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 190 meters THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 12 meters XAD = XAD02 34G003B000-360A00190H012	EXAMPLE ASSUMING NONGEOSTATIONARY, RAD01 16G030B000-360A00357H006
Earth Station Data	– Leaf Space - Kaspichan	l
State (XSC)	XSC = Bulgaria	
City Name (XAL)	XAL = Kaspichan	
Latitude (DDMMSS)	Lat = 431849 N	
Longitude (DDDMMSS)	Lon = 0270927 E	
Antenna Polarization (XAP)	XAP = XAP03 R	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Antenna Azimuth (XAZ)	XAZ = XAZ03 V05	THE EARTH STATION RECEIVER ANTENNA AZIMUTH (RAZ), THE MINIMUM ANGLE OF ELEVATION, V00 TO V90, EXAMPLE, RAZ01 V00
Antenna Dimensions (XAD)	ANTENNA GAIN(dBi) 34 dBi, BEAMWIDTH@ ½ Power 3 degrees, AZIMUTHAL RANGE 0-360 degrees,	EXAMPLE ASSUMING NONGEOSTATIONARY, RAD01 16G030B000-360A00357H006

	THE SITE ELEVATION ABOVE MEAN SEA	
	LEVEL IN METERS 97 meters	
	THE ANTENNA HEIGHT ABOVE TERRAIN IN	
	METERS 8 meters	
	XAD =	
	XAD03 34G003B000-360A00097H008	
	– RBC Signals - Pretoria	
State (XSC)	XSC = South Africa	
City Name (XAL)	XAL = Pretoria	
Latitude	Lat = 255139 S	
(DDMMSS)		
Longitude	Lon = 0282712 E	
(DDDMMSS)		
Antenna	XAP = XAP04 R	POLARIZATIONS INCLUDE :
Polarization (XAP)		H = HORIZONTAL,
		V = VERTICAL,
		S = HORIZONTAL AND VERTICAL,
		L = LEFT HAND CIRCULAR,
		R = RIGHT HAND CIRCULAR,
		T = RIGHT AND LEFT HAND
		CIRCULAR,
		J = LINEAR POLARIZATION
Antenna Azimuth	XAZ = XAZ04 V05	THE EARTH STATION RECEIVER
(XAZ)		ANTENNA AZIMUTH (RAZ), THE
(70.2)		MINIMUM ANGLE OF
		ELEVATION, V00 TO V90, EXAMPLE,
		RAZ01 V00
Antenna	ANTENNA GAIN(dBi) 39 dBi,	EXAMPLE ASSUMING
Dimensions (XAD)	BEAMWIDTH@ ½ Power 1 degrees,	NONGEOSTATIONARY, RADO1
	AZIMUTHAL RANGE 0-360 degrees,	16G030B000-360A00357H006
	THE SITE ELEVATION ABOVE MEAN SEA	1000308000-300A0033711000
	LEVEL IN METERS 1391 meters	
	THE ANTENNA HEIGHT ABOVE TERRAIN IN	
	METERS 6 meters	
	XAD = XAD04 39G001B000-360A01391H006	
ECC notoci	VYD04 3300010000-200401331U000	1
FCC notes:	SOAE	
1. Use S-Note		
2. REM AGN, 0	Cubesat, (MITRE)	
Satellite Station Da	ta – M-SEL (Receiver 1)	
Polarization (RAP)	RAP = RAP01 R	POLARIZATIONS INCLUDE :
		H = HORIZONTAL,
<u>L</u>	1	· · · ·

Orientation (RAZ)	RAZ = RAZ01 EC ANTENNA GAIN(dBi) 4 dBi	V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION NB= NARROWBEAM EC = EARTH COVERAGE (NTIA format (XAD), EXAMPLE,
Dimension (RAD)	BEAMWIDTH@ ½ Power 120 degrees RAD = RAD01 04G120B	XAD01 16G030B)
Type of satellite (State = SP) (City = geo or non)	Type = Nongeostationary	Choose either: Geostationary or Nongeostationary
For Geostationary	Longitude =	IF ANY SATELLITES ARE GEOSTATIONARY, REPORT ITS LATITUDE AS 000000N (XLA AND/OR RLA) AND REPORT ITS LONGITUDE (XLG AND/OR RLG).
For Nongeostationary (Orbital Data)	INCLINATION ANGLE 97 degrees, APOGEE IN KILOMETERS 510 km, PERIGEE IN KILOMETERS 510 km, ORBITAL PERIOD IN HOURS 1 AND FRACTIONS OF HOURS IN DECIMAL 0.6, THE NUMBER OF SATELLITES IN THE SYSTEM 1, ORB = 97IN00510AP00510PE001.6H01NRT01	IF ANY SATELLITES ARE NONGEOSTATIONARY, REPORT ITS INCLINATION ANGLE, APOGEE IN KILOMETERS, PERIGEE IN KILOMETERS, ORBITAL PERIOD IN HOURS AND FRACTIONS OF HOURS IN DECIMAL, THE NUMBER OF SATELLITES IN THE SYSTEM, THEN T01, EXAMPLE, REM04 *ORB,98.0IN00510AP00510PE001.5 8H01NRT01, AND FOR SPACE-TO- SPACE COMMUNICATIONS WITH ANOTHER NONGEOSTATIONARY SATELLITE ADD AN ADDITIONAL *ORB FOR IT ENDING IN R01, EXAMPLE, REM05 *ORB,72.9IN03209AP00655PE013.4 6H01NRR01

State (XSC)	XSC = Massachusetts USA	
City Name (XAL)	XAL = Bedford	
Latitude	Lat = 423018 N	
(DDMMSS)		
Longitude	Lon = 0711407 W	
(DDDMMSS)		
Antenna	XAP = XAP05 T	POLARIZATIONS INCLUDE :
Polarization (XAP)		H = HORIZONTAL,
		V = VERTICAL,
		S = HORIZONTAL AND VERTICAL,
		L = LEFT HAND CIRCULAR,
		R = RIGHT HAND CIRCULAR,
		T = RIGHT AND LEFT HAND
		CIRCULAR,
		J = LINEAR POLARIZATION
Antenna Azimuth	XAZ = XAZ05 V25	THE EARTH STATION RECEIVER
(XAZ)		ANTENNA AZIMUTH (RAZ), THE
		MINIMUM ANGLE OF
		ELEVATION, V00 TO V90, EXAMPLE,
		RAZ01 V00
Antenna	ANTENNA GAIN(dBi) 20 dBi,	EXAMPLE ASSUMING
Dimensions (XAD)	BEAMWIDTH@ ½ Power 5 degrees,	NONGEOSTATIONARY, RADO1
	AZIMUTHAL RANGE 0-360 degrees,	16G030B000-360A00357H006
	THE SITE ELEVATION ABOVE MEAN SEA	1000502000 500,00055711000
	LEVEL IN METERS 77 meters	
	THE ANTENNA HEIGHT ABOVE TERRAIN	
	IN METERS 3 meters	
	XAD =	
	XAD05 20G005B000-360A00077H003	
Satallita Station Da	Nto MSEL (Passiver 2)	
Polarization (RAP)	ata – M-SEL (Receiver 2) RAP = RAP02 T	POLARIZATIONS INCLUDE :
		H = HORIZONTAL,
		V = VERTICAL,
		S = HORIZONTAL AND VERTICAL,
		L = LEFT HAND CIRCULAR,
		R = RIGHT HAND CIRCULAR,
		T = RIGHT AND LEFT HAND
		CIRCULAR,
		J = LINEAR POLARIZATION
Orientation (RAZ)	RAZ = RAZ02 NB	NB= NARROWBEAM
		EC = EARTH COVERAGE
Antenna	ANTENNA GAIN(dBi) 8 dBi	(NTIA format (XAD), EXAMPLE,
Dimension (RAD)	BEAMWIDTH@ ½ Power 40 degrees	XAD01 16G030B)

	RAD = RAD02 08G040B0	
Type of satellite (State = SP) (City = geo or non)	Type = Nongeostationary	Choose either: Geostationary or Nongeostationary
For Geostationary	Longitude =	IF ANY SATELLITES ARE GEOSTATIONARY, REPORT ITS LATITUDE AS 000000N (XLA AND/OR RLA) AND REPORT ITS LONGITUDE (XLG AND/OR RLG).
For Nongeostationary (Orbital Data)	INCLINATION ANGLE 97 degrees, APOGEE IN KILOMETERS 510 km, PERIGEE IN KILOMETERS 510 km, ORBITAL PERIOD IN HOURS 1 AND FRACTIONS OF HOURS IN DECIMAL 0.6, THE NUMBER OF SATELLITES IN THE SYSTEM 1, ORB = 97IN00510AP00510PE001.6H01NRT01	IF ANY SATELLITES ARE NONGEOSTATIONARY, REPORT ITS INCLINATION ANGLE, APOGEE IN KILOMETERS, PERIGEE IN KILOMETERS, ORBITAL PERIOD IN HOURS AND FRACTIONS OF HOURS IN DECIMAL, THE NUMBER OF SATELLITES IN THE SYSTEM, THEN T01, EXAMPLE, REM04 *ORB,98.0IN00510AP00510PE001.5 8H01NRT01, AND FOR SPACE-TO- SPACE COMMUNICATIONS WITH ANOTHER NONGEOSTATIONARY SATELLITE ADD AN ADDITIONAL *ORB FOR IT ENDING IN R01, EXAMPLE, REM05 *ORB,72.9IN03209AP00655PE013.4 6H01NRR01

Transmit Frequency	/: 2.67-2.29 GHz	
Earth Station Data – MITRE Corporation Bedford MA USA (Transmitter 6)		
State (XSC)	XSC = Massachusetts USA	
City Name (XAL)	XAL = Bedford	
Latitude	Lat = 423018 N	
(DDMMSS)		
Longitude	Lon = 0711407 W	
(DDDMMSS)		
Antenna	XAP = XAP06 T	POLARIZATIONS INCLUDE :
Polarization (XAP)		H = HORIZONTAL,
		V = VERTICAL,

Antenna Azimuth	XAZ = XAZ06 V25	S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION THE EARTH STATION RECEIVER
(XAZ)		ANTENNA AZIMUTH (RAZ), THE MINIMUM ANGLE OF ELEVATION, V00 TO V90, EXAMPLE, RAZ01 V00
Antenna Dimensions (XAD)	ANTENNA GAIN(dBi) 24 dBi, BEAMWIDTH@ ½ Power 4 degrees, AZIMUTHAL RANGE 0-360 degrees, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 77 meters THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 3 meters	EXAMPLE ASSUMING NONGEOSTATIONARY, RAD01 16G030B000-360A00357H006
	XAD = XAD06 24G004B000-360A00077H003	
Satellite Station Da	ata – M-SEL (Receiver 3)	
Polarization (RAP) Orientation (RAZ)	RAP = RAP03 T RAZ = RAZ03 NB	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION NB= NARROWBEAM
Orientation (RAZ)		EC = EARTH COVERAGE
Antenna Dimension (RAD)	ANTENNA GAIN(dBi) 12 dBi BEAMWIDTH@ ½ Power 30 degrees RAD = RAD03 12G030B0	(NTIA format (XAD), EXAMPLE, XAD01 16G030B)
Type of satellite (State = SP) (City = geo or non)	Type = Nongeostationary	Choose either: Geostationary or Nongeostationary
For Geostationary	Longitude =	IF ANY SATELLITES ARE GEOSTATIONARY, REPORT ITS LATITUDE AS 000000N (XLA AND/OR

		RLA) AND REPORT ITS LONGITUDE
		(XLG AND/OR RLG).
For	INCLINATION ANGLE 97 degrees,	IF ANY SATELLITES ARE
Nongeostationary	APOGEE IN KILOMETERS 510 km,	NONGEOSTATIONARY, REPORT ITS
(Orbital Data)	PERIGEE IN KILOMETERS 510 km,	INCLINATION ANGLE, APOGEE
	ORBITAL PERIOD IN HOURS 1 AND	IN KILOMETERS, PERIGEE IN
	FRACTIONS OF HOURS IN DECIMAL 0.6,	KILOMETERS, ORBITAL PERIOD IN
	THE NUMBER OF SATELLITES IN THE	HOURS AND FRACTIONS OF
	SYSTEM 1,	HOURS IN DECIMAL, THE NUMBER
		OF SATELLITES IN THE SYSTEM,
	ORB =	THEN T01, EXAMPLE,
	97IN00510AP00510PE001.6H01NRT01	REM04
		*ORB,98.0IN00510AP00510PE001.5
		8H01NRT01, AND FOR SPACE-TO-
		SPACE
		COMMUNICATIONS WITH ANOTHER
		NONGEOSTATIONARY SATELLITE
		ADD AN ADDITIONAL
		*ORB FOR IT ENDING IN R01,
		EXAMPLE, REM05
		*ORB,72.9IN03209AP00655PE013.4
		6H01NRR01

Transmit Frequency	/: 4.90-4.99 GHz	
Earth Station Data – MITRE Corporation Bedford MA USA (Transmitter 7)		
State (XSC)	XSC = Massachusetts USA	
City Name (XAL)	XAL = Bedford	
Latitude (DDMMSS)	Lat = 423018 N	
Longitude (DDDMMSS)	Lon = 0711407 W	
Antenna	XAP = XAP07 T	POLARIZATIONS INCLUDE :
Polarization (XAP)		H = HORIZONTAL,
		V = VERTICAL,
		S = HORIZONTAL AND VERTICAL,
		L = LEFT HAND CIRCULAR,
		R = RIGHT HAND CIRCULAR,
		T = RIGHT AND LEFT HAND
		CIRCULAR,
		J = LINEAR POLARIZATION
Antenna Azimuth	XAZ = XAZ07 V25	THE EARTH STATION RECEIVER
(XAZ)		ANTENNA AZIMUTH (RAZ), THE
		MINIMUM ANGLE OF
		ELEVATION, V00 TO V90, EXAMPLE,
		RAZ01 V00

Antenna Dimensions (XAD)	ANTENNA GAIN(dBi) 29 dBi, BEAMWIDTH@ ½ Power 2 degrees, AZIMUTHAL RANGE 0-360 degrees, THE SITE ELEVATION ABOVE MEAN SEA LEVEL IN METERS 77 meters THE ANTENNA HEIGHT ABOVE TERRAIN IN METERS 3 meters	EXAMPLE ASSUMING NONGEOSTATIONARY, RAD01 16G030B000-360A00357H006
	XAD = XAD07 29G002B000-360A00077H003	
	1.1.207 25 3002 5001 3001 1000 111000	
Satellite Station Da	ita – M-SEL (Receiver 4)	
Polarization (RAP)	RAP = RAPO4 T	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Orientation (RAZ)	RAZ = RAZ04 EC	NB= NARROWBEAM EC = EARTH COVERAGE
Antenna Dimension (RAD)	ANTENNA GAIN(dBi) 9 dBi BEAMWIDTH@ ½ Power 70 degrees RAD = RAD04 09G070B	(NTIA format (XAD), EXAMPLE, XAD01 16G030B)
Type of satellite (State = SP) (City = geo or non)	Type = Nongeostationary	Choose either: Geostationary or Nongeostationary
For Geostationary	Longitude =	IF ANY SATELLITES ARE GEOSTATIONARY, REPORT ITS LATITUDE AS 000000N (XLA AND/OR RLA) AND REPORT ITS LONGITUDE (XLG AND/OR RLG).
For Nongeostationary (Orbital Data)	INCLINATION ANGLE 97 degrees, APOGEE IN KILOMETERS 510 km, PERIGEE IN KILOMETERS 510 km, ORBITAL PERIOD IN HOURS 1 AND FRACTIONS OF HOURS IN DECIMAL 0.6, THE NUMBER OF SATELLITES IN THE SYSTEM 1,	IF ANY SATELLITES ARE NONGEOSTATIONARY, REPORT ITS INCLINATION ANGLE, APOGEE IN KILOMETERS, PERIGEE IN KILOMETERS, ORBITAL PERIOD IN HOURS AND FRACTIONS OF HOURS IN DECIMAL, THE NUMBER OF SATELLITES IN THE SYSTEM, THEN T01, EXAMPLE,

ORB =	REM04
97IN00510AP00510PE001.6H01NRT01	*ORB,98.0IN00510AP00510PE001.5
	8H01NRT01, AND FOR SPACE-TO-
	SPACE
	COMMUNICATIONS WITH ANOTHER
	NONGEOSTATIONARY SATELLITE
	ADD AN ADDITIONAL
	*ORB FOR IT ENDING IN R01,
	EXAMPLE, REM05
	*ORB,72.9IN03209AP00655PE013.4
	6H01NRR01

Transmit Frequency	/: 5.25-5.35 GHz	
Earth Station Data	 MITRE Corporation Bedford MA USA (Trar 	nsmitter 8)
State (XSC)	XSC = Massachusetts USA	
City Name (XAL)	XAL = Bedford	
Latitude	Lat = 423018 N	
(DDMMSS)		
Longitude	Lon = 0711407 W	
(DDDMMSS)		
Antenna	XAP = XAP08 T	POLARIZATIONS INCLUDE :
Polarization (XAP)		H = HORIZONTAL,
		V = VERTICAL,
		S = HORIZONTAL AND VERTICAL,
		L = LEFT HAND CIRCULAR,
		R = RIGHT HAND CIRCULAR,
		T = RIGHT AND LEFT HAND
Antenna Azimuth	XAZ = XAZ08 V25	J = LINEAR POLARIZATION THE EARTH STATION RECEIVER
(XAZ)	AAZ - AAZUO VZS	ANTENNA AZIMUTH (RAZ), THE
		MINIMUM ANGLE OF
		ELEVATION, V00 TO V90, EXAMPLE,
		RAZ01 V00
		101201 000
Antenna	ANTENNA GAIN(dBi) 29 dBi,	EXAMPLE ASSUMING
Dimensions (XAD)	BEAMWIDTH@ ½ Power 2 degrees,	NONGEOSTATIONARY, RAD01
	AZIMUTHAL RANGE 0-360 degrees,	16G030B000-360A00357H006
	THE SITE ELEVATION ABOVE MEAN SEA	
	LEVEL IN METERS 77 meters	
	THE ANTENNA HEIGHT ABOVE TERRAIN	
	IN METERS 3 meters	
	XAD =	
	XAD08 29G002B000-360A00077H003	

Satellite Station Da	ta – M-SEL (Receiver 5)	
Polarization (RAP)	RAP = RAP05 T	POLARIZATIONS INCLUDE : H = HORIZONTAL, V = VERTICAL, S = HORIZONTAL AND VERTICAL, L = LEFT HAND CIRCULAR, R = RIGHT HAND CIRCULAR, T = RIGHT AND LEFT HAND CIRCULAR, J = LINEAR POLARIZATION
Orientation (RAZ) Antenna Dimension (RAD)	RAZ = RAZ05 EC ANTENNA GAIN(dBi) 9 dBi BEAMWIDTH@ ½ Power 70 degrees RAD = RAD05 09G070B	NB= NARROWBEAM EC = EARTH COVERAGE (NTIA format (XAD), EXAMPLE, XAD01 16G030B)
Type of satellite (State = SP) (City = geo or non)	Type = Nongeostationary	Choose either: Geostationary or Nongeostationary
For Geostationary	Longitude =	IF ANY SATELLITES ARE GEOSTATIONARY, REPORT ITS LATITUDE AS 000000N (XLA AND/OR RLA) AND REPORT ITS LONGITUDE (XLG AND/OR RLG).
For Nongeostationary (Orbital Data)	INCLINATION ANGLE 97 degrees, APOGEE IN KILOMETERS 510 km, PERIGEE IN KILOMETERS 510 km, ORBITAL PERIOD IN HOURS 1 AND FRACTIONS OF HOURS IN DECIMAL 0.6, THE NUMBER OF SATELLITES IN THE SYSTEM 1, ORB = 97IN00510AP00510PE001.6H01NRT01	IF ANY SATELLITES ARE NONGEOSTATIONARY, REPORT ITS INCLINATION ANGLE, APOGEE IN KILOMETERS, PERIGEE IN KILOMETERS, ORBITAL PERIOD IN HOURS AND FRACTIONS OF HOURS IN DECIMAL, THE NUMBER OF SATELLITES IN THE SYSTEM, THEN T01, EXAMPLE, REM04 *ORB,98.0IN00510AP00510PE001.5 8H01NRT01, AND FOR SPACE-TO- SPACE COMMUNICATIONS WITH ANOTHER NONGEOSTATIONARY SATELLITE ADD AN ADDITIONAL *ORB FOR IT ENDING IN R01, EXAMPLE, REM05 *ORB,72.9IN03209AP00655PE013.4 6H01NRR01